

Amendment and Response

Applicant: Jason D. Hanzlik et al.

Serial No.: 10/801,285

Filed: March 16, 2004

Docket No.: 10423US01

Title: TAPE REEL ASSEMBLY WITH MICROCELLULAR FOAM HUB

REMARKS

The following remarks are made in response to the Office Action mailed March 9, 2006. In that Office Action, claims 1, 12, 13 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cooper, U.S. Patent No. 6,511,010 ("Cooper"). Claims 4-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cooper. Claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art in view of Cooper as applied to claims 1, 12, 13 above, and further in view of Martini-Vvedensky et al., U.S. Patent No. 4,473,665 ("Martini-Vvedensky"). Claims 14-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art in view of Martini-Vvedensky and Cooper.

In addition, the amendments made to the drawings and to the specification in the Response mailed January 23, 2006, were accepted and entered by the Examiner, which is noted with appreciation.

With this response, claims 1 and 12 have been amended, claim 13 has been cancelled, and claim 20 is newly presented. Claims 1-12 and 14-20 remain pending in the application and are presented for consideration and allowance.

Claim Rejections under 35 U.S.C. § 102

Claims 1, 12, 13 were rejected under 35 U.S.C. § 102(b) as anticipated by Cooper.

Cooper teaches at column 3, lines 29-37, referencing Figures 1 and 7, a fiber optic routing spool 10 composed of a pipe or other cylinder 16 having large partition rings 12 and small spacer rings 14 stacked coaxially along the cylinder 16. Cooper teaches that the cylinder 16 is a standard two-inch diameter pipe of PVC plastic, and that the larger outer rings 12 alternate with the smaller rings 14 to form a cylinder with rings perpendicular to a central axis. Cooper teaches at column 3, lines 38-45 that rings 12, 14 are composed of a rigid microcellular polyurethane material.

The routing spool 10 taught by Cooper allows optic fiber cables to be wrapped in individual slots on spacer rings 14 and between partition rings 12 to separate wound fiber optical cables. Cooper at column 4, lines 4-17. Cooper teaches that fiber optic cables wound in this

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manner prevent kinking and micro-bends that could potentially damage the fiber optic cables. Cooper at column 2, lines 31-35.

The Examiner takes the position that the relatively smaller spacer ring 14 taught by Cooper is a hub, and that the relatively larger partition rings 12 on either side of the spacer ring 14 are flanges.

With this Response, independent claim 1 has been amended to recite a plastic microcellular foam hub portion including a hub defining a tape winding surface and a first flange extending radially from an end of the hub, where one of the hub and the first flange define drive teeth. Support for the language of amended independent claim 1 can be located throughout the specification, including at page 12, line 10 through page 13, line 18, and in FIGS. 5 and 6. No new matter has been added to the claims.

Cooper does not teach or suggest a first flange extending radially from an end of the hub, where one of the hub and the first flange define drive teeth, such that claim 1 cannot be anticipated by Cooper. Therefore, applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejections to claims 1, 12, 13 over Cooper.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 4-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cooper, claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art in view of Cooper as applied to claims 1, 12, 13 above, and further in view of Martini-Vvedensky, and claims 14-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art in view of Martini-Vvedensky and Cooper.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify or combine the reference teachings. Second, there must exist a reasonable expectation of success. Third, the references must teach or suggest all of the claim limitations. MPEP § 2143.

As a threshold matter, the *prima facie* case of obviousness cannot be established if the references employed are non-analogous art. Non-analogous art is any reference that is not in the

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inventor's field of endeavor, or reasonably pertinent to the specific problem with which the inventor was involved. *In re Deminski*, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986).

Applicants maintain the position set forth in the Response mailed January 23, 2006 that Cooper's field of endeavor is fiber optic cable/installation, which is not in the same field of endeavor as the claimed tape reel assembly. Notably, substantial evidence must support the PTO's factual assessment of the field of endeavor. *In re Bigio*, 381 F.3d 1320, 1326, 72 USPQ2d 1209 (Fed. Cir. 2004) (citing *In re Gartside*, 203 F.3d 1305, 1315 (Fed. Cir. 2000)). The Office Actions have not offered evidence that supports a finding of Cooper being in applicants' field of endeavor. The Federal Circuit offers this guideline: "[T]he PTO must show adequate support for its findings on the scope of the field of endeavor in the Applicants' written description and claims, including the structure and function of the invention." 381 F.3d at 1326 (Quoting Judge Rader, emphasis added). With this in mind, it is respectfully submitted that Cooper is not in the applicants' field of endeavor, nor is there support in applicants' written description and claims for finding that Cooper is within the scope of applicants' field of endeavor.

In addition, it is respectfully submitted that, based on Federal Circuit law, Cooper is not reasonably pertinent to the specific problem solved by the pending tape reel assembly invention. "A reference is reasonably pertinent if . . . it is one which, because of the matter with which it deals, logically would have commended itself to the inventor's attention in considering his problem . . . If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem . . . If is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it." *In re Clay*, 966 F.2d 656, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

The stated purpose in Cooper is to provide a "specially designed routing spool that allows fiber cables to be wrapped in individual slots of suitable radius to provide separation of cables and prevent kinking." See Cooper Abstract. Embodiments of the claimed invention are directed to providing a tape reel assembly with a stiffer, deformation resistant hub having a uniformly straight tape winding surface. See Specification at page 12, line 24 through page 16, line 10. Thus, under *In re Clay*, Cooper does not have the same purpose as the claimed invention, and cannot be said to relate to the same problem. Since Cooper is directed to a different purpose

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(preventing bending of fiber optic cable), it is respectfully submitted that one of skill in the tape reel assembly art would have no motivation or occasion to consider the Cooper reference. Thus, it is respectfully submitted that Cooper is not reasonably pertinent to the specific problem solved by the claimed tape reel assembly.

Consequently, it is respectfully submitted that Cooper is not from the same field of endeavor as the claimed tape reel assembly, nor is Cooper reasonably pertinent to the specific problem solved by the claimed tape reel assembly. For these reasons, it is respectfully submitted that a *prima facie* case of obviousness cannot be established since Cooper is non-analogous art.

Regarding claims 4-11 that were rejected under 35 U.S.C. § 103(a) as unpatentable over Cooper, Cooper does not teach or suggest a first flange extending radially from an end of the hub, where one of the hub and the flange define drive teeth, as required by amended independent claim 1. In addition, no suggestion or motivation exists to modify the fiber optic spool of Cooper to arrive at the limitations of the tape reel assembly of amended independent claim 1. For these reasons, it is respectfully submitted that claims 4-11 are not rendered obvious in view of Cooper. It is respectfully requested that the rejections to claims 4-11 under 35 U.S.C. § 103(a) over Cooper be withdrawn.

Claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as unpatentable over applicants' admitted prior art in view of Cooper, and further in view of Martini-Vvedensky. The Examiner takes the position that it would have been obvious to a person having ordinary skill in the art to employ the microcellular material taught by Martini-Vvedensky and take advantage of certain characteristics related to strength and lightness. Applicants disagree.

It is respectfully submitted that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not in Applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). In this regard, it is respectfully submitted that one of ordinary skill in the tape reel assembly art simply would have no motivation or occasion to consider the fiber optic cable spool of Cooper, and that no suggestion or motivation has been shown to exist to modify or combine applicants' disclosure at pages 1-3 of the specification with the fiber optic spool of Cooper and the polymers of Martini-Vvedensky to arrive at the claimed tape reel assembly of amended independent claim

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1. Moreover, even if the cited references are impermissibly combined, they fail to teach or suggest a first flange extending radially from an end of the hub, where one of the hub and the first flange define drive teeth, as required by amended independent claim 1.

For these reasons, it is respectfully submitted that claims 2 and 3 recite patentable subject matter over the cited references, such that the rejections to claims 2 and 3 under 35 U.S.C. § 103(a) should be withdrawn.

Regarding the rejections to claims 14-19, the Examiner takes the position that Martini-Vvedensky discloses microcellular foam, and Cooper discloses a reel having hubs 14 and flanges 12 formed of microcellular foam material. The Examiner's position is that it would have been obvious to a person of ordinary skill in the art to provide the material taught by Martini-Vvedensky to the hub of Cooper to arrive at the claimed data storage tape cartridge. Applicants respectfully disagree.

First, it is respectfully submitted that Cooper is non-analogous art and not available as a § 103(a) reference, as set forth above. In particular, no evidence has been offered that supports a finding of Cooper as being within applicants' field of endeavor. Moreover, apart from Cooper's field of endeavor, it is respectfully submitted that the fiber optic spool of Cooper is not reasonably pertinent to the specific problem solved by the claimed data storage tape cartridge. For this reason alone, it is respectfully submitted that a *prima facie* case of obviousness cannot be established based upon the cited references.

In addition, the teachings or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not in applicants' disclosure. One of ordinary skill in the art would have no motivation to employ the microcellular material taught by Martini-Vvedensky in a data storage tape cartridge reel assembly without the impermissible benefit of hindsight derived entirely from applicants' disclosure. Consequently, it is respectfully submitted that a *prima facie* of obviousness cannot be established based upon the cited references absent some suggestion or motivation to modify or combine the Cooper and Martini-Vvedensky reference teachings.

Further, even if the cited references are impermissibly combined, the purported combination fails to teach or suggest limitations required by claims 15-19. For example, claim

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15 requires the tape winding surface to have an average total waviness of less than 500 micro-inches. The Examiner's position is that Martini-Vvedensky teaches micro-cellular foam material resulting in strength and lightness, and that an average total waviness and radial run-out would have been obvious matters of design choice. Applicants respectfully disagree. Reference is made to the specification at page 3, lines 7-12 where it is noted that reinforcing a hub to increase stiffness is known to result in an increase of waviness of the tape winding surface. Consequently, the purported combination of Martini-Vvedensky and Cooper would result in the spacer ring 14 of Cooper having increased stiffness and increased waviness. In contrast, claim 15 provides a microcellular foam hub defining a tape winding surface having an average total waviness of less than 500 mico-inches. Thus, it is believed that at least claims 15 and 16 recite patentable subject matter over the cited references.

The specification provides at page 7, lines 23-27 that the hub 50 is concentric such that the tape winding surface is everywhere equidistant from a central axis. To this end, a radial total indicator run-out measurement gauges the concentricity of the tape winding surface. In the Examiner's view, one of skill in the art would employ the teachings of Martini-Vvedensky to achieve increased stiffness. However, as explained above, increased stiffness would be expected to result in increased waviness, and a wavy hub will have a wavy tape winding surface such that the hub will not be concentric. In contrast, claims 17 and 18 provide for a microcellular foam hub having a tape winding surface with a radial total indicator run-out of less than 700 micro-inches, and less than 500 micro-inches, respectively. It is believed that the purported combination teaches away from these limitations, such that the claimed total indicator run-out of claims 17 and 18 are not rendered obvious in light of the cited references.

With regard to claim 19, claim 19 provides a microcellular foam hub having a wall thickness of between 0.07 to 0.125 inches. The specification provides at page 9, line 25 to line 28 reinforcing a conventional hub results in undesirable mold sinks in the polymer that negatively affect the tape winding surface. The specification provides at page 9, line 28 to page 10, line 9 that it has been surprisingly found that a highly straight hub can be approximately 50% thicker, which results in a stiffer hub capable of resisting deformation due to the winding of storage tape. This surprising result is indicative of non-obviousness. For this reason, it is

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respectfully submitted that claim 19 recites additional patentably distinct subject matter over the cited references.

For all of the above reasons, it is respectfully requested that the rejections to claims 14-19 under 35 U.S.C. § 103(a) over applicants' admitted prior art in view of Martini-Vvedensky and Cooper be withdrawn.

With this Response, claim 20 is newly presented to particularly point out and distinctly claim subject matter that the applicants regard as inventive. Claim 20 provides the data storage tape cartridge of claim 14, where the hub includes drive teeth. Support for the language of claim 20 can be located throughout the specification, including at page 12, line 10 through page 13, line 18, and in FIGS. 5 and 6. No new matter has been added to the claims. It is respectfully submitted that claim 20 further defines patentably distinct independent claim 14, such that newly presented claim 20 is allowable.

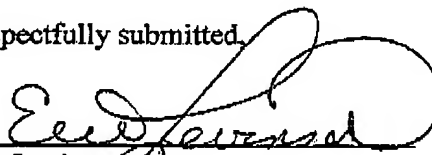
CONCLUSION

In view of the above, applicants respectfully submit that pending claims 1-12 and 14-20 recite patentable subject matter, are in form for allowance, and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections, and allowance of claims 1-12 and 14-20 is respectfully requested.

No fees are required under 37 C.F.R. § 1.16 for the addition of claim 20. However, if fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 09-0069.

The Examiner is invited to telephone the applicants' representative at the below-listed number to facilitate prosecution of this application.

Respectfully submitted,

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